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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,722	07/11/2001	Akihiro Hikichi	03327.2259	7732

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EXAMINER

TORRES VELAZQUEZ, NORCA LIZ

ART UNIT PAPER NUMBER

1771

DATE MAILED: 01/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/901,722

Applicant(s)

HIKICHI ET AL.

Examiner

Norca L. Torres-Velazquez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6 and 7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 2, 6 and 7 have been considered but are moot in view of the new ground(s) of rejection.
2. Applicant's submission of a certified English translation of Japanese Patent Application 200-211567 removes the YAMANE reference (EP 1081406A2), as prior art reference under 35 U.S.C. 102(a).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over ROBERTS et al. (US 4,182,437) in view of JP 56016578 A or in view of CARLSON et al. (US 5,871,159).

ROBERTS et al. discloses a friction material for use in brake lining, clutch pads and the like. The reference teaches that in general, a friction material contains a matrix or binder, such as a thermosetting resin or vulcanized rubber, a fibrous reinforcement, and a friction modifier. (Column 1, lines 25-28) The reference provides an amorphous glass, which in finely divided form, is adapted for use as a combined friction modifier and reinforcing agent for friction material. (Col. 2, lines 49-53) The reference teaches the use of silicate glasses and teaches the

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use of SiO₂ systems with the following compositions in which Fe₂O₃ may optionally be used as a modifying oxide (refer to Column 4, lines 20-65; claim 11):

SiO₂: 60% to 75%;

Li₂O: 10% to 30%;

MgO: 8% to 20%;

Fe₂O₃: 0% to 5%

The reference further teaches that the glasses are smelted and fiberized and the fibers maybe either continuous or discontinuous. The diameter and length of the fibers are not at all critical and may vary widely. For example, a diameter may average from about a 0.5 micron to about 30 microns and usually is about 1.75 microns. Lengths, when continuous fibers are not used, may average from about 1 centimeter to about 50 centimeter. (Column 6, lines 64-68 through Column 7, lines 1-3) The reference further teaches that other finely divided forms can be employed such as powder or bead [equated to the presently claimed grains], which, if desired, can be fabricated from the fibers. (Column 7, lines 16-21) The reference teaches the use of an organic resin, elastomers and other additives, modifiers, filler, extenders can be added to the thermosetting organic resin. Further, the reference teaches that the proportions of these are not critical and that in general, the friction material contains in parts by weight from about 20 to about 80 parts of the resin, from about 5 to about 40 parts of the present finely divided glass. (Column 7, lines 16-65)

It is the Examiner's interpretation that ROBERTS et al. provides all the elements claimed in the present application. With regards to the inclusion of less than 10% of at least one of Al₂O₃ and ZrO₂, it is the Examiner's interpretation that less than 10% could also be zero. Further, Roberts et al. also teaches the use of these as additives as disclosed in Col. 5, lines 23-28) With

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regards to the fiber diameter and length, it is noted that the reference teaches that these are not at all critical and may vary widely, as stated above.

The JP'578 reference is directed to a friction material and teaches the use of fibers with diameters of 0.1-30 microns and length of 0.5-30 mm. (Abstract)

The CARLSON et al. reference teaches a product to replace asbestos in brake pads and other molded friction materials. (Abstract) The reference teaches fibers with an average length of no more than about 0.15 inch (374 μm). (Col. 3, lines 16-31)

Since the ROBERTS et al., the JP'578 reference and CARLSON et al. are directed are directed to friction materials, the purpose disclosed by any of the secondary references would have been recognized in the pertinent art of ROBERTS et al.

It is noted that the ROBERTS et al. reference discloses that the diameter and length of the fibers are not at all critical and may vary widely.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the fiber of the friction material of ROBERTS et al. and provide it with a small length as claimed herein since the prior art of record shows that to use fiber lengths within such range (i.e. 100-1,500 μm) are suitable functional equivalents for friction material applications.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Norca L. Torres-Velazquez whose telephone number is 571-272-1484. The examiner can normally be reached on Monday-Thursday 8:00-4:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Norca L. Torres-Velazquez
Examiner
Art Unit 1771

January 19, 2005